

#2983 Store at -20°C

# mTOR (7C10) Rabbit mAb

✓ 100 µl (10 western blots)



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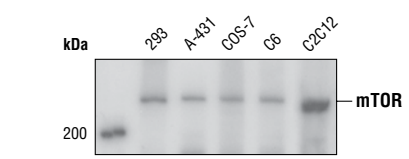
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IHC-P, IF-IC, F Endogenous	H, M, R, Mk	289 kDa	Rabbit IgG**

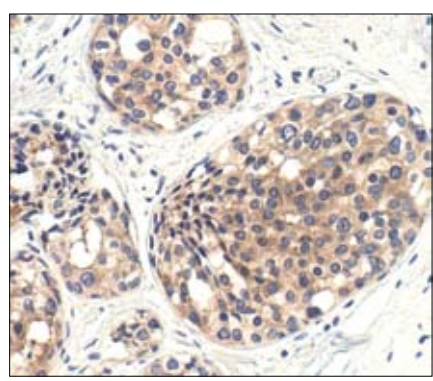
**Background:** The mammalian target of rapamycin (mTOR, FRAP, RAFT) is a Ser/Thr protein kinase (1-3) that functions as an ATP and amino acid sensor to balance nutrient availability and cell growth (4,5). When sufficient nutrients are available, mTOR responds to a phosphatidic acid-mediated signal to transmit a positive signal to p70 S6 kinase and participate in the inactivation of the eIF4E inhibitor, 4E-BP1 (6). These events result in the translation of specific mRNA subpopulations. mTOR is phosphorylated at Ser2448 via the PI3 kinase/Akt signaling pathway and autophosphorylated at Ser2481 (7,8). mTOR plays a key role in cell growth and homeostasis and may be abnormally regulated in tumors. For these reasons, mTOR is currently under investigation as a potential target for anti-cancer therapy (9).

**Specificity/Sensitivity:** mTOR (7C10) Rabbit mAb detects endogenous levels of total mTOR protein.

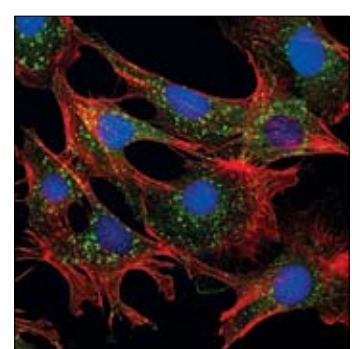
**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser2481 of human mTOR.



Western blot analysis of extracts from 293, A431, COS-7, C6, and C2C12 cells, using mTOR (7C10) Rabbit mAb.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma, showing cytoplasmic localization using mTOR (7C10) Rabbit mAb.



Confocal immunofluorescent analysis of mouse embryonic fibroblast (MEF) cells using mTOR (7C10) Rabbit mAb (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5 #4084 (fluorescent DNA dye).

Entrez-Gene ID #5562  
Swiss-Prot Acc. #Q13131

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

\*Species cross-reactivity is determined by western blot.  
\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.

**Recommended Antibody Dilutions:**

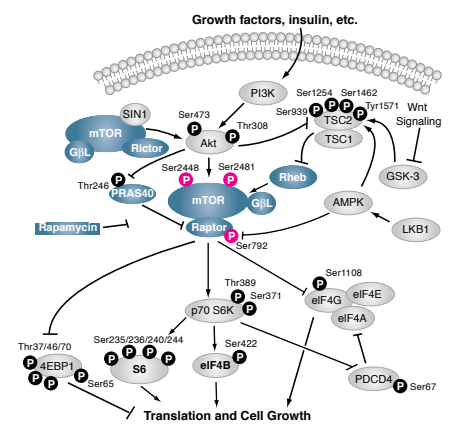
Western blotting	1:1000
Immunohistochemistry (Paraffin)	1:50
Unmasking buffer:	Citrate
Antibody diluent:	TBST-5% NGS
Immunofluorescence (IF-IC)	1:200
Flow Cytometry	1:400

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

**Background References:**

- (1) Sabers, C.J. et al. (1995) *J. Biol. Chem.* 270, 815–822.
- (2) Brown, E.J. et al. (1994) *Nature* 369, 756–758.
- (3) Sabatini, D.M. et al. (1994) *Cell* 78, 35–43.
- (4) Gingras, A.C. et al. (2001) *Genes Dev.* 15, 807–826.
- (5) Dennis, P.B. et al. (2001) *Science* 294, 1102–1105.
- (6) Fang, Y. et al. (2001) *Science* 294, 1942–1945.
- (7) Navé, B.T. et al. (1999) *Biochem. J.* 344 Pt 2, 427–431.
- (8) Peterson, R.T. et al. (2000) *J. Biol. Chem.* 275, 7416–7423.
- (9) Huang, S. and Houghton, P.J. (2003) *Curr. Opin. Pharmacol.* 3, 371–377.

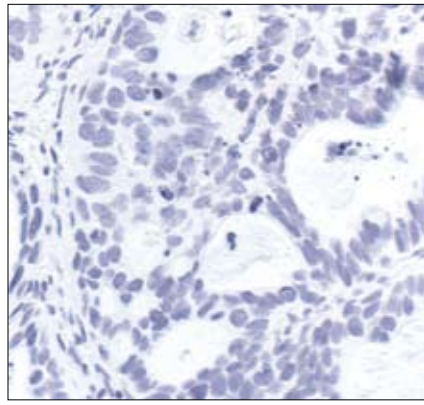
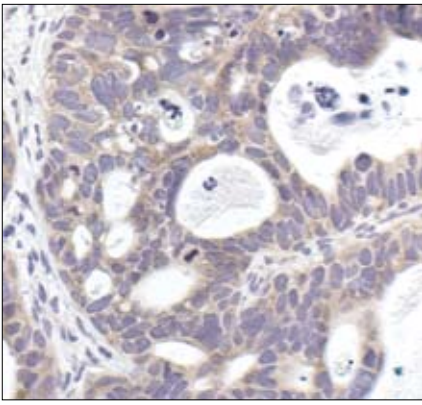


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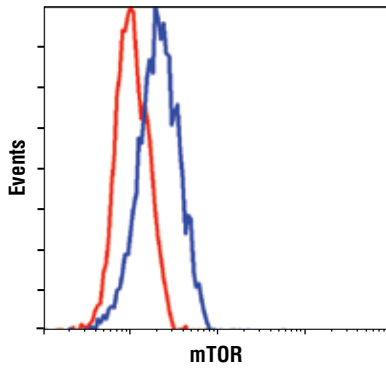
**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.**

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine  
Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.

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Immunohistochemical analysis of paraffin-embedded human lung carcinoma, using mTOR (7C10) Rabbit mAb in the presence of control peptide (left) or mTOR Blocking Peptide #1072 (right).



Flow cytometric analysis of 293 cells, using mTOR (7C10) Rabbit mAb (blue) compared to a nonspecific negative control antibody (red).